

Indiana - October 2013 (ver. 1.0)

AGRONOMY TECHNICAL NOTE – Quality No-Till Series

The *Quality No-Till Series* provides management techniques for the successful adoption of Quality No-till Cropping Systems. This information is applicable to most Indiana soils and cropping conditions and covers broad application.

Success at a No-Till System cannot be achieved merely by stopping tillage. Fields being planned for conversion to a no-till system should be carefully evaluated for conditions which will become inherent problems during the transition phase. The following is a checklist for a field's readiness for no-till.

- **Compaction** - Check each field at various locations for compacted layers and tillage layers with abrupt density changes. Don't assume winter freeze and thaw cycles will remove these layers. Use a Cover Crop mix with a deep rooting combination of fibrous and tap root species. A low surface disturbance inline ripper can be used prior to seeding a cover crop to fracture these layers. If the soil needs leveling prior to cover crop planting, a shallow, low residue disturbing, rotary harrow or vertical tillage tool should be used. Avoid finishing tools, or disks that re-creates horizontal tillage bands with shovels, sweeps or angled disks.
- **Adapt Harvest Equipment** - Combines, grain carts and tractor should be equipped for controlled traffic and/or with floatation tires/tracks. Manage crop residues with a combination of corn head upgrades that adequately crush the stalk at multiple locations and choppers and spreaders that distribute all crop residues evenly as they exit the combine.
- **pH** - Check the pH by separating 6" cores into 0-3" and 3-6" soil samples. If pH is below 6.0 at both depths then lime should be incorporated with a chisel plow. If only the surface is low, then incorporation is generally unnecessary if high calcium lime is available.
- **Soil Fertility** - Follow the same testing procedures as for pH. High and very high test levels in the 0-3" or low fertility in the 3-6" zone should be addressed through deep (>4") banding, or incorporation if adequate equipment is not available.
- **Leveling the field** - Ridges, ruts and gullies will not be corrected by merely switching to no-till. Coordinate corrective measures with above operations where possible.
- **Drainage** - Repair, replace, and install new tile systems. Few investments will return more than drainage where drainage is needed.
- **Control perennial, biannual, and winter annual weeds** - Most of these weeds are best controlled with fall applied herbicides.
- **Consider Cover Crops** - Nearly every item on the above checklist can be complimented by the use of a cover crop. The ultimate economic incentive from a no-till system comes from improving soil health. Cover crops can increase the rate at which this transformation occurs. Seed appropriate species or mixes immediately after completing harvest or a corrective measure mentioned previously.
- **Make plans to attend as many winter no-till workshops and roundtables as possible** - Farmer networks and alliances are born out of these kinds of meetings. Most of the successful long term no-tillers rely on networks.